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Claims

1. A method for suppressing feedback between an
acoustical output of an electrical/acoustical output
converter arrangement and an acoustical input of an
5 acoustical/electrical input converter arrangement of a
hearing device, wherein

- acoustical signals impinging on the input converter
arrangement are converted into a first electric
signal by a controllably variable transfer
10 characteristic which is dependent on the angle at
which said acoustical signals impinge on said
input converter arrangement;
- said first electric signal is processed and a
resulting signal is applied to the output converter
15 arrangement;
- said feedback to be suppressed is compensated by a
feedback compensating signal which is generated in
dependency of the resulting signal and is fed back
by a feedback signal path upstream said processing;

20 wherein further

- said electric feedback compensating signal is fed
back to and superimposed upon the first electric
signal and
- adaptation rate of said converting to variations of
25 said transfer characteristic is controlled in
dependency of the loop gain along said feedback
signal path.

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2. The method of claim 1, further comprising slowing down the adaptation rate of said converting with increasing loop gain along said feedback signal path.

3. The method of claims 1 or 2, further comprising
5 minimising amplification of said transfer characteristic at one or more specific angles which accord to angles at which said feedback to be suppressed predominantly impinges on said input converter arrangement.

4. The method of one of claims 1 to 3, further comprising
10 frequency selectively controlling said adaptation rate.

5. The method of one of claims 1 to 4, further comprising performing said converting in said first electric signal, and said processing along said feedback signal path in frequency domain and controlling said adaptation rate at
15 selected frequencies in dependency of said loop gain at said selected frequencies.

6. The method of one of claims 1 to 5, further comprising minimizing amplification of said transfer characteristic at specific angles frequency selectively.

7. The method of one of claims 1 to 6, further comprising
20 performing said converting into said first electric signal independently for frequencies present in said feedback to be suppressed and for frequencies substantially not present in said feedback to be suppressed.

8. The method of one of claims 1 to 7, further comprising
25 performing said control of said adaptation rate selectively for frequencies present in said feedback to be suppressed,

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said control comprising switching said converting on and off for said frequencies present.

9. The method of claim 8, further comprising performing switching from on to off and/or vice versa steadily during
5 a predetermined timespan.

10. The method of one of claims 1 to 9, said hearing device being a behind-the-ear or a in-the-ear hearing device.

11. The method of one of claims 1 to 10, said hearing
10 device being a ear protection or a hearing improvement device.

12. A hearing device, comprising:

- 15 • an acoustical/electrical input converter arrangement and an adaptive beamformer unit, generating at an output an electric output signal dependent on acoustical signals impinging on said input converter arrangement and in dependency of angle at which said acoustical signals impinge, said beamformer unit having a first control input
20 for varying beamforming characteristics
- 25 • a processing unit with an input operationally connected to the output of said beamformer unit and with an output operationally connected to an input of an electrical/acoustical output converter arrangement
- a feedback compensator unit, the input thereof being operationally connected to said input of said electrical/acoustical output converter arrangement,

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an output thereof being operationally connected to
the input of said processing unit

and wherein further

- 5 • said beamformer unit has a second control input for
adjusting adaptation rate,
- said output of said feedback compensator unit is
operationally superimposed with the output of said
beamformer unit,
- 10 • said feedback compensator unit has an output for a
loop gain indicative signal, being operationally
connected to said second control input of said
beamformer unit.

13. The device of claim 12 being a behind-the-ear hearing
device or an in-the-ear hearing device.

- 15 14. The device of one of claims 12 or 13, being a hearing
protection device or a hearing improvement device.

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